REMARKS

Claims 1-11 are pending in the application. Claims 1, 2, 6 and 8 have been amended. Claim 2 has been amended to clarify the antecedent basis of a claim term. Support for the amendment may be found at least on page 4, lines 22 - 23. Claim 6 was amended for consistency.

Claims 1 and 8 were amended to eliminate unnecessary language and add the feature that the surface of the first material layer has an oxygen/carbon ratio which is higher than 0.19. Support for this amendment may be found in Example 1. The language is derived from the following passages in the original application. First, page 14, lines 3-13, discloses oxygen/carbon ratios of a plasma-treated polypropylene surface (sample 1a) and plasma-treated polyethylene surfaces (samples 2a and 3a). The plasma-treated polypropylene surface (sample 1a) has an oxygen/carbon ratio of 0.19 (page 14, line 7) and the plasma-treated polyethylene surfaces (samples 2a and 3a) have oxygen/carbon ratios of 0.26 and 0.29 (page 14, lines 9 and 11). Secondly, support is found at page 14, lines 17-23 which states as follows:

> The results show that the proportion of oxygen-containing compounds on the material surface is highest for materials 2 and 3, i.e., materials with a fibre covering of polyethylene. This means that the plasma-treated polyethylene surfaces have higher hydrophilicity or wettability than corresponding plasma-treated polypropylene surfaces.

Thus, the plasma-treated polyethylene surfaces (claims 1 and 8 include first material layers which have a surface which essentially consists of polyethylene) have higher hydrophilicity or wettability than corresponding plasma-treated polypropylene surfaces, and the plasma-treated polyethylene surfaces also have oxygen/carbon ratios which are higher than 0.19, i.e., the oxygen/carbon ratio of the plasma-treated polypropylene surfaces in sample 1a. The fact is that the plasma-treated polyethylene surfaces in samples 2a and 3a have oxygen/carbon ratios of 0.26 and 0.29, respectively, both ratios clearly higher than 0.19. Thus, there is support for the amendments to claims 1 and 8 and no new matter has been added.

An abstract was required by the Office Action and has been supplied on a

separate sheet. The abstract supplied is identical to the abstract appearing on the front page of the corresponding PCT application, WO 99/01099, filed with this application. No new matter was added.

Claims 1-11 were rejected under 35 U.S.C. § 112, second paragraph. These rejections are moot in view of the amendments to the claims. In view thereof, Applicants respectfully request that these rejections be withdrawn.

Claims 1, 2 and 6-10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Langdon, U.S. Patent No. 5,368,910. Applicants respectfully traverse this rejection.

Claim 1 is directed to a liquid-permeable cover sheet for an absorbent article which cover sheet comprises at least a first material layer, wherein a surface of the first material layer essentially consists of polyethylene which has been treated with plasma or corona to obtain a hydrophilic surface. The surface of the first material layer further has an oxygen/carbon ratio which is higher than 0.19. Independent claim 8 is directed to an absorbent article comprising an absorbent body enclosed between a liquid-impermeable cover sheet and a liquid-permeable cover sheet. The liquid-permeable cover sheet comprises at least a first material layer wherein a surface of the first material layer essentially consists of polyethylene which has been treated with plasma or corona in order to obtain liquid permeability. The surface of the first material layer further has an oxygen/carbon ratio which is higher than 0.19.

Langdon discloses a three-dimensional fluid pervious web suitable for use as a top sheet in an absorbent article. The web includes a first layer of polymeric material and a second layer of fibrous material secured to the first layer of polymeric material. The fibrous material preferably comprises synthetic fibers, such as nylon, polyethylene, polypropylene, polyester, biocomponent binder fibers or natural fibers such as cellulosic fibers. To increase the hydrophilicity of the fibrous surface, the fibers may be treated with a surfactant or the surface may be subjected to ionizing radiation, for example, plasma. However, Langdon does not disclose plasma- or corona-treated surfaces essentially consisting of polyethylene and having an oxygen/carbon ratio which is higher than 0.19.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Since Langdon does not describe the oxygen/carbon ratio set forth in the claims of the present application, it cannot anticipate the claimed invention. Moreover, such ratio cannot be inherent since Langdon describes a variety of fibrous materials, some of which are shown in the present application to give oxygen/carbon ratios lower than that claimed. *See Example 1.* Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Continental Can Company USA, Inc. v. Monsanto Co.*, 948 F.2d 1264 (Fed. Cir. 1991). In view of the lack of description in Langdon of at least one element of the claimed invention, Applicants respectfully request that this rejection be withdrawn.

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Langdon. Applicants respectfully traverse this rejection.

Claim 11 is dependent on claim 9, which is dependent on claim 8. As discussed above, claim 8 sets forth a certain oxygen/carbon ratio for the surface of the first material layer. Langdon does not describe such a ratio. Moreover, Langdon does not state that fibers with a surface of polyethylene are preferred. Furthermore, Langdon does not state that plasma treatment is a preferred method to obtain a hydrophilic surface. However, as regards corona-treated and plasma-treated materials, it has been found by Applicants that different materials show significant differences in the acquired ability to retain the liquid permeability upon repeated wetting. *Specification, page 4, lines 7-11.* In other words, it has been found that the liquid permeability upon repeated wetting is substantially better for materials with a surface of polyethylene than for materials with a surface of polypropylene. *Specification, page 4, lines 11-16.* Accordingly, the properties of polyethylene in connection with plasma or corona treatment are clearly distinguished from corona-treated films of polypropylene or other materials. Thus, the invention of claim 11 would not have been obvious from Langdon and Applicants respectfully request that this rejection be withdrawn.

Claims 3-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Langdon in view of Goldman, U.S. Patent No. 5,669,894. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Langdon in view of Thomas, U.S. Patent No. 4,351,784. Applicants respectfully traverse these rejections.

Thomas discloses a corona-treatment of a perforated thermoplastic film having tapered capillaries, wherein particularly preferred perforated films are polyethylene and polypropylene. In Thomas, corona-treated films of polyethylene and polypropylene are either described together or as having equal properties. In fact, Thomas states that "Any thermoplastic material which may be formed into flexible film or sheets may be used in the production of the novel products of the present invention". *Column 3, lines 48-50.*

As noted above, however, as regards corona-treated and plasma-treated materials, it has been found by Applicants that different materials show significant differences in the acquired ability to retain the liquid permeability upon repeated wetting. *Specification, page 4, lines 7-11.* In other words, it has been found that the liquid permeability upon repeated wetting is substantially better for materials with a surface of polyethylene than for materials with a surface of polypropylene. *Specification, page 4, lines 11-16.* Accordingly, the properties of polyethylene in connection with plasma or corona treatment are clearly distinguished from corona-treated films of polypropylene or other materials.

Thomas does not disclose plasma or corona-treated surfaces essentially consisting of polyethylene and having an oxygen/carbon ratio which is higher than 0.19. In view of the foregoing, Thomas does not remedy the deficiencies of Langdon such that the invention of claim 5 would have been obvious to one of skill in the art from a combination of Langdon and Thomas.

Likewise, Goldman is not relevant to the invention of claims 3 and 4 since the document relates to absorbent structures with a high amount of superabsorbent material. The thermoplastic bicomponent fibers disclosed in Goldman are used in the absorbent core to form bond sites that hold the web of fibers together. *Column 25, lines 4-7.* To increase the hydrophilicity of the fibers, only surfactant treatment is mentioned. *Column 24, lines 65-67.* Moreover, a cover sheet comprising a material

layer having a particular oxygen/carbon ratio is not described. Therefore, the combination of Goldman and Langdon would not have made the claimed invention obvious to one of skill in the art. In view thereof, Applicants respectfully request that these rejections be withdrawn.

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Mary B. Grant
Mary B. Grant
Registration Number 32,176

P.O. Box 1404
Alexandria, Virginia 22313-1404
(919) 941-9240

Date: 11/13/01

ABSTRACT

B4

A liquid-permeable cover sheet (1, 201, 301) for an absorbent article such as a diaper (300), an incontinence protector, a sanitary towel or the like, which cover sheet comprises at least a first material layer (2, 202, 302) with a surface which essentially consists of polyethylene which has been treated with plasma or corona in order to obtain liquid permeability. The invention moreover concerns an absorbent article with a liquid-permeable cover sheet (1, 201, 301) according to the invention.

Attachment to Amendment dated November 13, 2001
Marked-up Copy
Amended Claims 1-2, 6 and 8

1. (Amended) A liquid-permeable cover sheet (1, 201, 301) for an absorbent article [such as a diaper (300), an incontinence protector, a sanitary towel or the like], which cover sheet comprises at least a first material layer, [characterized in that the] wherein a surface of the first material layer (2) essentially consists of polyethylene which has been treated with plasma or corona [and in this way has] to obtain a hydrophilic surface, and said surface of the first material layer has an oxygen/carbon ratio which is higher than 0.19.

2. (Amended) A liquid-permeable cover sheet according to claim 1, [characterized in that] wherein the first material layer (2) consists of a nonwoven material comprising fibres having a surface, in which at least the surface of the fibres essentially consists of polyethylene.

6. (Twice Amended) A liquid-permeable cover sheet according to claim 1 and further having a second material layer (204), [characterized in that the] wherein a surface of the second material layer (204) essentially consists of polypropylene.

8. (Amended) Absorbent article [such as a diaper (300), an incontinence protector, a sanitary towel or the like,] comprising an absorbent body (305) enclosed between a liquid-impermeable cover sheet (303) and a liquid-permeable cover sheet (301), which liquid-permeable cover sheet (301) comprises at least a first material layer (302), [characterized in that the] wherein a surface of the first material layer (302) essentially consists of polyethylene which has been treated with plasma or corona in order to obtain liquid permeability, and said surface of the first material layer has an oxygen/carbon ratio which is higher than 0.19.